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Article

Co-management in Community Forestry: How the Partial Devolution of Management Rights Creates Challenges for Forest Communities

Peter Cronkleton[a,#], Juan M. Pulhin[b] and Sushil Saigal[c]

[a]Centre for International Forestry Research (CIFOR), Lima, Peru

[b]University of the Philippines Los Baños, Philippines

[c]University of Cambridge, Cambridge, United Kingdom

[#]**Corresponding author. E-mail**: pcronkleton@cgiar.org

Abstract

Forest tenure reform has opened economic and livelihood opportunities for community forestry management through the devolution of management rights under broader decentralisation reforms. However, the transfer of rights and associated power to forest communities is usually partial. The view of property as composed of 'bundles of rights' allows for the disaggregation of rights transferred from government to local people. In practice, it is common that rights held by natural resource stakeholders encompass only part of the rights bundle. This partial transfer of rights shapes community forestry institutions and the manner in which they function. When communities and state agencies share responsibilities and benefits of forest management, they collaborate within co-management systems. Co-management systems are attractive to governments because they open avenues for local participation in resource governance and more equitable benefit-sharing while maintaining some level of state control. However, co-management systems can place a greater burden on community level actors without providing the corresponding benefits. As a result, co-management can fail to meet expectations. In response, the promotion of community forestry may require greater emphasis on adjusting forest regulatory frameworks, institutions, and agencies, to allow more freedom by community-level actors in developing forest management systems.

Keywords: community forestry, co-management, property rights, tenure

INTRODUCTION

Over several decades legal reforms involving decentralisation and forest tenure reform in the tropics have attempted to promote conditions conducive to sustainable forest management by community-level stakeholders (Larson et al. 2010b). Although there have been diverse drivers of this trend, common interests underlying these efforts include both environmental and equity issues. On one hand, deforestation and degradation are often attributed to ill-defined or contradictory property rights, the lack of secure tenure, and weak or poorly enforced legal frameworks (Brown and Pearce 1994; Kaimowitz and Angelsen 1998). On the other, providing forest-dependent people clear access to forest resources and opportunities to legally exploit them could provide incentives for maintaining forest cover (Eliasch 2008). These forestry reforms targeting communities and community organisations are part of broader processes known as democratic decentralisation—the transfer of powers and resources to representative authorities accountable to local populations (Ribot 2002).

While having apparently straightforward goals, government-led tenure and forest reforms have faced complex challenges in determining how to allocate rights and also to ensure that those

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who receive the rights manage the resources sustainably. In response, governments often devolve forest management rights only partially, retaining key powers for themselves, a situation that creates co-management systems. In co-management systems multiple actors negotiate and share key management functions, entitlements, and responsibilities over an area or resource (Borrini-Feyerabend 2000). In community forestry situations, community-level actors are granted some decision-making power over management and opportunities to benefit within frameworks defined and enforced by state agencies. Community residents may work in the forest and exploit resources for economic livelihoods but the state maintains significant roles overseeing, monitoring, and evaluating how these people use forest resources. While co-management is potentially promising for conserving forests and improving human well-being, in practice the strategies and actions adopted by state actors often create faulty co-management systems, undercutting their effectiveness and limiting their impact.

This paper examines forest management rights and the manner in which they are transferred from governments to community-level organisations. It uses the 'bundle of rights' concept to disaggregate those rights that are devolved to local communities, and explores the nature of co-management arrangements underlying the resulting community forestry initiatives. The analysis draws on a global comparative study of forest tenure reform conducted by Centre for International Forestry Research (CIFOR) and the Rights and Resources Initiative (RRI; see the Larson and Dahal introductory chapter in this volume; also Larson et al. 2010a, b). The CIFOR-RRI global project had taken a rights-based approach (Nyamu-Musembi and Cornwall 2004) to analyse multi-scale case studies from countries where forest tenure reform was underway and where the potential to influence policy decisions existed. This paper uses cases from Bolivia, the Philippines, India, and Guatemala, purposely selected to illustrate a diverse range of innovative reforms that attempted to devolve management rights over forests to communities to provide them with economic opportunities. Although not intended as a representative sample, the cases show how similar problems with co-management occur in initiatives that are geographically dispersed, involve different types of organisations that manage forests of varied sizes, for different resources, and under different legal frameworks.

Although the partial devolution of management rights to communities creates systems of shared responsibility over forest resources between local community managers and state regulatory agencies, the manner in which those agencies operate within the regulatory framework has significant implications for how community forestry functions (Pulhin et al. 2010). This paper argues that the transfer of power to local groups is often restricted, and too often the approaches used by the government hamper the potential advantages that could be gained from co-management systems. Increased reflection by policy makers, dialogue with community managers, and adjustment of oversight processes could improve the efficiency of these systems, simplify regulatory processes, and likely increase benefits to rural people and the forests they manage.

The paper is divided into five sections including this introduction. The second section provides an overview of property rights, their devolution within forest tenure reform and explains how the partial transfer of management rights leads to co-management systems. The third section presents case studies where communities from Bolivia, the Philippines, India and Guatemala have struggled to take advantage of commercial opportunities from community forest management under co-management frameworks. The fourth section discusses three key issues observed in the case studies that hamper co-management—burdensome start up costs for communities; imbalanced distribution of responsibility; and uniform and inflexible regulatory frameworks. The concluding section suggests the revaluation of the underlying rights and mechanisms in the co-management of community forests to improve its potential.

ALLOCATING RIGHTS IN COMPLEX FOREST LANDSCAPES: THE ROLE OF CO-MANAGEMENT

Before examining how the allocation of rights over forests resources to communities has worked in theory and practice, it is necessary to review a few basic concepts about natural resource property rights. Forest tenure reform takes place within a broader context of decentralisation, which is the transfer of power from central governments to administrative or territorial entities at lower levels (Ribot 2002). Key issues in decentralisation are whether secure power is transferred, and whether it goes 'to authorities representative of, and accountable to, local populations (Ribot 2004: 9). Although seen as a means to improve efficiency of management and administration, and increase equity and participation, many governments resist transferring appropriate and sufficient powers to local actors (Ribot 2002). There are several reasons that may underlie this phenomenon: genuine concern to assure the sustainable use of natural resources (Larson et al. 2010b), vested interests in maintained elite capture or rent seeking (Adams 2004; Larson and Ribot 2007; Larson and Pulhin This issue), and also inflexibility caused by bureaucratic inertia. In the context of forest tenure reform, the hesitance of governments to fully support and defend forest properties that are being recognised for community-level actors has meant that too often tenure rights have been insufficient to provide security (Larson et al. 2008).

A discussion of how devolution takes place within forest tenure reform requires examining property concepts in greater detail. Property is frequently conceptualised within one of the three tenure systems—public, communal, and private property. However, these systems commonly overlap, rather than being clear-cut and discrete units (Feeny et al. 1990). Community lands are often mosaics of public, common, and privately held areas, and frequently entail 'webs of interest' that combine public, collective, and individual rights over resources

(Meinzen-Dick and Mwangi 2008). In fact, rights are often not held in their entirety by any one individual or entity, are frequently shared among groups, and different rights can be held by distinct individuals. An example would be a collective system where rights may be held by a communal authority that determines the allocation of access rights, but resource use takes place at the individual or household level rather than communally, all of which is reviewed and sanctioned by state agencies.

Forest tenure reform takes place in landscapes that are often composed of multiple stakeholders, competing interest groups, and distinct public agencies holding rights and claiming control over land and forest resources and with variable levels of power to enforce their rights. The transfer of tenure rights is further complicated because these rights are multifaceted, involving different types of tenure systems and collections of specific rights over resources, e.g., customary 'tree tenure' systems (Fortmann et al. 1985). Frequently, tenure rights depend on the resource; e.g., forests and subsoil resources can be separated from land rights and held by the state as public property regardless of whether located within communal or private properties.

An influential approach for desegregating the rights embedded in property is to view tenure rights not as a single over-arching property right but instead as 'bundles of rights' (Schlager and Ostrom 1992; Agrawal and Ostrom 2001; see also Oyono et al. This issue for use of this concept in the Cameroon case). In this view, the bundle consists of access, withdrawal, management, exclusion, and alienation rights. Each right grants different powers of choice and action to the rights holder and all are defined by rules. Some rights like management, exclusion, and alienation offer considerably more power than other rights. They are considered 'collective-choice rights' or decision-making rights, since they allow the rights holder to define rules and standards for exercising power, such as deciding who has access to the resource or how a resource gets harvested (Schlager and Ostrom 1992). Because these rights allow the rights holder to establish new rules or adjust those that exist, they are crucial for allowing resource users to adapt to changing conditions affecting resources or their livelihoods.

Examining which portions of the rights bundle have been transferred to communities is crucial for understanding how community forest management functions. Although management and withdrawal rights are similar, the primary difference lies in the level of decision-making power. A holder of withdrawal rights can harvest resources within defined parameters, but with no power to define how, when or what resource use will take place in the future and with little control over others who share withdrawal rights. With management rights, the rights holder can make such decisions. Management is "the right to regulate internal use patterns or transform the resource" (Agrawal and Ostrom 2001: 489). Resource management—as opposed to resource use—should be understood as a collection of decisions, practices, and concepts that involve decision-making beyond immediate resource use and with future intent. Management rights are closely tied to exclusion rights (e.g., the right to keep others out). Taking advantage of management rights entails investments for future resource use. But to assure that the investments are worthwhile and that the rights holder captures the future benefits, the manager needs the authority and ability to exclude outsiders and others who would not comply with management rules.

The fact that decentralisation is often incomplete is evident in the rights (from the bundle) that are devolved to local actors over forests. In practice, the transfer of the entire bundle of rights rarely occurs. Instead, some rights are withheld by the state or are not offered without official oversight or control. A common trend in tropical forests is that the state retains or restricts alienation rights (e.g., the right to sell land or transfer rights to others) while recognising other rights for indigenous or traditional forest peoples (Barry et al. 2010). Even where collective and individual property rights are recognised, they often involve state claims of authority, particularly in relation to subsoil or forest resources. When dealing with forest resources, the state typically maintains control through oversight, or places restrictions on how community-level actors use and benefit from these forest resources. Usually management rights granted by the state over forests represent a partial devolution of decision-making powers. For example, a community given the right to commercially manage timber may be able to choose what portion of its forest to manage, what trees to harvest, and how to carry out the harvest; however, its decisions must be approved and must comply with management norms established by the state.

Because of the partial transfer of management rights under forest tenure reform, the process usually produces community forestry models involving co-management arrangements. Co-management is "a situation in which two or more social actors negotiate, define, and guarantee amongst themselves a fair sharing of the management functions, entitlements, and responsibilities for a given territory, area, or set of natural resources" (Borrini-Feyerabend 2000). Typically this involves the allocation of power and responsibility between the government and local people over the use and conservation of natural resources (Berkes et al. 1991, cited in Carlsson and Berkes 2005), and it has been a common feature of governmental programs to promote community forestry (Fisher 1995). Co-management should be understood "as a process in which the parties and their relative influence, positions, and activities are continuously re-adjusted" (Carlsson and Berkes 2005). It should be an adaptive process that consists of negotiation, bargaining, or mediation, and provides a venue for problem solving and learning. Ideally, it combines the strengths and mitigates the weaknesses of each of the partners involved (Singleton 1998).

Co-management arrangements have resulted from the realisation that local people have roles to play in resource management, conservation, and development, but also the reality that forest dependent people have demanded recognition of their rights and have been increasingly difficult to exclude (Cronkleton et al. 2008). In addition, transferring rights to

community-level stakeholders provides access to detailed local knowledge necessary for good management decisions and involves local interest groups that could do a better job than forest bureaucrats making standardised decisions in distant offices. In theory, that is how co-management should function; in practice finding the right balance for sharing rights, responsibilities, and associated powers to realise mutual benefits can be a challenge.

Co-management arrangements can produce unintended consequences and not live up to their promise of sharing responsibilities and benefits. Onerous restrictions on resource use by governmental agencies can discourage participation in the formal sector, stifle innovation, or even exclude some stakeholders. The sharing of decision-making does not eliminate the power imbalance inherent in top-down oversight procedures of forestry agencies; the procedures typically require local people to gain state approval, submit to field inspections, and accept restrictions on the transport of forest resources, or suffer sanctions for noncompliance. Also, the institutional mechanisms set up to allocate and control management rights by the state can be very complex, and entail high transaction costs for both communities and governments. In fact, too much governmental reliance on top-down control schemes can limit adaptation that is the key to resilience and could undercut conservation goals (Armitage et al. 2009). Finally, the state is not a single entity, and different government branches or agencies can have authority over the same territories regulating, for example, natural resources, agriculture, and commerce. Under such conditions, attempts at co-management can be undermined when agencies interacting with communities have contradictory policies and do not coordinate. The effectiveness of co-management systems varies widely depending on the decision powers that are granted or retained by the state, and whether responsibilities and benefits are balanced between different actors. Unfortunately, too frequently dysfunctional co-management systems constrain the opportunities and benefits offered by community forestry. Clarifying the nature of rights and powers devolved, and the manner in which they influence the operation of co-management systems is key to understanding how community forestry systems function. The next section will illustrate these issues by drawing on case studies of community forestry under forest tenure reform.

CO-MANAGEMENT AFTER TENURE AND FORESTRY REFORM

The manner in which co-management systems are created through the partial devolution of property rights strongly influences how the resulting community forestry system functions, how accessible opportunities are for local people, and how much they benefit in the end. To examine community forest co-management, this paper examines community forestry case studies documented as part of a broader multiyear study of forest tenure reform (see Larson and Dahal This issue, Larson et al. 2010a, b for a full description of the project). The cases, not intended as a representative sample, were selected to provide a diverse range of examples of forest tenure reform that were intended to benefit community-level groups with economic opportunities. They will be used to examine forest tenure reform and its impacts on four types of community-level stakeholders: an indigenous forest management associations in lowland Bolivia, a forestry development cooperative in the southern Philippines, community forest concessions in the Guatemalan Petén, and a tree growers' cooperative in northwest India.

There are common aspects among each of these co-management arrangements. In all these cases the state maintains ownership and substantial control over forests (i.e., full retention of alienation rights, and a partial role in others). Rights for management operations are granted conditionally, requiring compliance with regulations. The rights holders are allowed decision-making power but these decisions must fall within parameters set by the state. Although geographically dispersed and from different socio-political contexts, common problems are observed across each, but also impressive resilience is apparent on the part of community members and organisations in responding to constraints.

Bolivia: Forest co-management with indigenous community forestry associations

The first case study, describes how the devolution of property rights and exclusive management rights to forests on titled property were undercut by burdensome regulations, inefficient agencies, and the titling strategy they adopted. It examines the development of community forestry initiatives with indigenous people in the lowland Bolivian region of Guarayos. The root of this co-management arrangement is a series of decentralisation reforms in the 1990s that changed the bundle of tenure rights available to Bolivia's indigenous people (Pacheco 2005). A tenure reform law (popularly known as the INRA Law for the agency it created, The National Institute of Agrarian Reform; INRA) was ratified in 1996. The INRA law recognised a type of communal property called a TCO (Tierra comunitaria de origen, original community land) that offered communal rights and decision-making powers to indigenous populations and, as property owners, the rights to exclude others. As defined by the INRA law, a TCO is a communal property that covers lands traditionally occupied and used by indigenous populations. TCOs are inalienable, indivisible, non-reversible, collective, and non-mortgageable as well as tax exempt. Within these communal properties, the internal distribution and use of resources is determined by the residents' customary use although they are still required to follow agrarian and forestry regulations.

The same year that the INRA Law was ratified, a new forestry law created a normative framework in which indigenous people could finally claim forest management rights. These reforms opened up forest management opportunities that could provide indigenous people with new sources of income. Under the new forestry law, forest management rights for subsistence

resource use were devolved almost completely, again defined by customary practice with little involvement by state agencies. However, for the commercial use of forest resources, management rights were allocated only with approval from the state's forest superintendency for management plans using specific norms for indigenous land.

One region where both the INRA and the forestry laws have dramatically changed the dynamics of property rights and forest use is in the Guarayos province in northern Santa Cruz. The region was known for its rich forests, which attracted timber companies, agro-industries, and colonists beginning in the 1980s. After the Guarayos TCO demand was presented in 1996, the government determined that the property should cover 1.3 million ha (VAIPO 1999). However, titling has been slow and even after a decade it is still not complete. Over the last decade the population has become ethnically mixed, with the indigenous population ranging from as high as 93 per cent to only 36 per cent within the three municipalities in the province (UDAPE 2003). With the influx of outsiders, the indigenous people have struggled to maintain secure control over their customary property (Cronkleton et al. 2009).

INRA's strategy for titling the TCO focused first on remote areas that were not contested, which allowed rapid progress over large areas. However, these areas were not where most Guarayo people lived and so it was little consolation for indigenous people whose lands claims were under pressure from other stakeholders (Cronkleton et al. 2009). Most of the population is concentrated near an interdepartmental highway that crossed the TCO, where there are more property disputes and indigenous land claims are frequently contested. In response to the drawn out process, and to address land security problems surrounding their villages, Guarayos groups embraced forest management plans as a strategy to control communal forests, exclude outsiders, and provide another opportunity to generate income.

Although the forests in the TCO were on property owned by the Guarayo people, by law the forest still belonged to the state. Commercial management requires prior authorisation from the national forest superintendency which then monitors the logging operations to assure compliance with technical norms. Gaining approval for management rights from the state was a time-consuming and costly process. For approval of management rights, indigenous people needed to form management organisations and document their uncontested control over the designated forest management unit with approval from the Guarayos indigenous organisation COPNAG (Central de Organizaciones de Pueblos Nativos Guarayos). They also needed to carry out inventories and develop a management plan that conformed to the government's technical norms. Reaching the approval stage could take years. For example, the community of Cururú waited more than two years for approval of their management plan from the initial planning to the final approval from the forest superintendency. Once a management plan is approved, the indigenous community organisations had to submit annual operating plans based on a census of commercial timber in the harvest unit and then, at the end of the season, submit an annual harvest report both prepared and signed by a registered forester. The preparation of a management plan is complex and costly so Guarayos communities had to seek assistance from NGOs that could provide technical support and subsidise the costs of preparing management and annual operation plans.

As of 2008, seven communities have gained approval for general forest management plans in Guarayos covering some 150,000 ha of forest (Cronkleton et al. 2009), about 11 per cent of the proposed TCO. The plans benefit approximately 250 indigenous households directly with wage labour and profits from timber sales. Even though timber companies had already removed the high-grade timber, significant volumes of alternative species with commercial value remain. When these communities harvest and sell timber, they can potentially generate tens of thousands of dollars in gross income. However, frequently this is not possible because of delays in gaining approval, internal conflicts often provoked by loggers, and the difficulty in excluding outsiders from their forests.

The co-management arrangements with the government have created disincentives for the community forest management groups. Although NGOs subsidised initial investments, the communities bear a high proportion of the risks and transaction costs of the system. For those communities that controlled small or degraded forested areas, attracting support from NGOs was difficult so it was hard to justify the cost and effort necessary to gain approval to commercially manage their forests.

Government agencies have not fully met their responsibilities of supporting community rights in Guarayos. Bolivia's forest superintendency was poorly funded and understaffed, resulting in delays in authorisations. The lack of staff and funding also meant that the forest superintendency was less effective in restricting illegal and unsustainable timber harvests. Of the seven community forest management projects in Guarayos, three communities close to the highway have struggled with encroachment by outsiders. Requests for assistance from INRA and the forest superintendency to defend their management units and reaffirm their exclusion rights have gone unanswered (Cronkleton et al. 2009).

As the Guarayos case study illustrates, significant efforts were made to recognise the rights of indigenous people to control their territories and manage forests. However, misguided titling strategy, onerous regulatory frameworks, and inefficiencies with governmental agencies created bottlenecks in the co-management arrangements. As a result, benefits have not been as extensive as anticipated and some indigenous people interested in commercial forest management have been unable to participate.

The Philippines: Forest co-management in a forestry development cooperative

The Philippines case examines the results of a shift in government policy from a system in which forest resource rights were granted to large-scale industry to one where rights

were transferred to community organisations to carry out forest management. In this case, the co-management system is undercut because the standard regulations are burdensome, are not adjusted to the different levels of capacity of community organisations, and are not accompanied with sufficient support to aid fledgling community management groups.

Forestland in the Philippines is owned by the state and the main agency responsible for its administration and management is the Department of Environment and Natural Resources (DENR). In 1989, the DENR established a community forestry programme to provide qualified community organisations with forest management agreements granted for periods of 25 years, renewable for another 25. In 1995, the government shifted the national forestry strategy to prioritise the community-based forest management program (Pulhin and Ramirez 2008). The government granted community-level organisations the right to occupy and manage certain forests and forestlands that previously had been held by industry.

One such organisation was the Ngan Panansalan Pagsabangan Forest Resources Development Cooperative located on the southern Philippines island of Mindanao (Pulhin and Dressler 2009). This cooperative manages the second-largest community-based forest management project in the Philippines. The cooperative's forest had been formerly licensed to a timber company, Valderrama Lumber, but the company's licensing agreement had expired in 1994. Concerned that the forest would become an open access area, without strong community organisation to channel local use and benefits from forests, the DENR, with support from the United States Agency for International Development, introduced in 1995 the idea of forming a cooperative (Pulhin and Ramirez 2008). A proposal was presented to local governments within the former concession area. Although members of the Mansaka-Mandaya indigenous people were initially hesitant, they eventually embraced the idea. Migrant workers who had been employed by the company were also allowed to become cooperative members. The cooperative was formed and registered with the government in 1996. Later that same year, it was awarded a management agreement covering 14,800 ha of forestland outside the towns of Compostela and New Bataan. Of the cooperative's 324 members, former migrants make up 60 per cent of the membership and local Mansaka-Mandaya indigenous people the rest (Pulhin and Ramirez 2008).

Under community-based forest management, the cooperative is allowed to extract timber, provided it develops a management plan, prepares a medium-term plan projecting the timber volume to be harvested over five years, and applies for an annual resource use permit. However, the permit application process is tedious and entails high transaction costs—approval can easily take more than six months and costs almost USD 5,000 (Pulhin and Dressler 2009).

The cooperative has basically the same rights formerly held by the company, but lacks the same political and economic power to exert influence on the government bureaucracy. In practice, the situation is more contentious. Although community forestry was a government priority, the state's bureaucracy was unprepared for the paradigm shift and most of its old staff has had a hard time embracing its new function (Pulhin and Ramirez 2008). Decision-making has remained centralised. Moreover, policies emanating from the national government tend to restrict rather than assist the cooperative.

The systems described by Pulhin and Dressler (2009) do not facilitate community operations. Despite the long and costly process of developing a management plan to request resource use permits, the permits are valid for only one year, counted from the end of the previous one. Because of such delays, an approved permit could end up being valid for only six months by the time it is received by the cooperative. In addition, three times between 1998 and 2006 the DENR issued national suspensions of resource use permits based on the allegations of non-compliance or violations by community organisations. The suspensions were applied uniformly even to well-run community organisations. Even though the Ngan Panansalan Pagsabangan Forest Resources Development Cooperative held Smartwood certification, its permits were suspended along with all the others. Furthermore, the DENR did not take into account the suspensions and delays to adjust the cooperative's development targets in the management plan, placing greater pressure on the cooperative.

The cooperative lacked the power and influence of the logging company and now had to contend with several other groups that claim rights to the cooperative's forest management area, including the military and the New People's Army, a rebel group that considers the forest its base. From time to time, the cooperative must negotiate with the military, the rebel group, and the DENR, just to secure the safe passage of timber and to avoid delays in transportation. Because the cooperative does not have the money to hire security guards, illegal loggers have been drawn to the site especially during the period when resource use permits were cancelled. These loggers harass the cooperative's staff, and in some instances have used threats of violence to intimidate the cooperative.

Although the Philippine's national forest policy is purportedly intended to promote community management, in practice the actions of government agencies undercut or limit benefits of these programs. Rights were shifted from industry to prioritise community-level groups but insufficient efforts were made to accommodate the community capacities. Overall, in the case of the Ngan Panansalan Pagsabangan Forest Resources Development Cooperative, the suspensions and conflicts have eroded community members' motivation and commitment to protect and manage their forests (Guiang and Castillo 2007).

Co-management with tree growers' cooperatives in India

The next case examines the Tree Growers' Cooperative Society programme (TGCS) in northwest India, a cooperative model created to establish and manage tree plantations on degraded lands. The TGCS programme emerged in the 1980s from Indian governmental agencies concerned about fuelwood and fodder scarcity, and increasing land degradation (Saigal et al. 2008). Under the TGCS model, cooperatives were provided with long-

term leases to state-owned common lands (officially, 'revenue wasteland') for developing tree plantations and increasing fodder production. However, the leases are for extremely small and degraded land parcels. The leases usually covered approximately 40 ha, were valid for 25 years, and could be renewed for another 10, provided that there was no violation of the lease conditions. Membership of each cooperative was generally limited to one village, although in practice other villagers could also participate; attempts were made to involve as many households as possible. There was one member per household, each paying a nominal membership fee. The cooperatives established fuelwood and fodder plantations on the leased land and contracted local guards to protect the plantations against illicit grazing, tree felling, and collection of various forest products. The cooperative model for tree plantations was expected to be a promising institutional alternative to the existing social forestry programme, and was launched with substantial funding from an Indian government agency as well as foreign donors (Saxena 1996; NTGCF 1997; Misra 2002; IRMA 2006).

Programme activities were guided by an organisation that became known as the National Tree Growers' Cooperative Federation Limited (NTGCF). The entire cost of the plantation was borne by NTGCF, which for the first five years provided technical and programmatic support through field teams based in the region (NTGCF 1997; IRMA 2006). By 2007, there were 548 tree growers' cooperatives (FES 2007). However, external financial support had ended and there was no specific project supporting the cooperatives (Saigal et al. 2008). Nonetheless, the leased concessions continued to operate.

The TGCS case study focused on three villages in the state of Rajasthan in northwest India (Saigal et al. 2008). Rajasthan is the largest state in India, constituting 10 per cent of the country's area (GoI 2008). Although nine per cent of the state is classified as forestland, the actual forest cover is just five per cent (FSI 2003). Most of the region (61 per cent) is either desert or semi-desert (GoR 2007), and as much as 30 per cent of the state is classified as 'wasteland' (MoRD and NRSA 2005). State lands classified as 'revenue wastelands' are included in the wasteland total and are treated as common lands by villagers but are often *de facto* 'open access' causing further degradation.

The three villages studied had registered as TGCS organisations between 1991 and 1992 (Saigal et al. 2008). Their populations ranged from 82 to 220 households, with territories varying from 490 to 1716 ha. Village lands consisted of three types of property—private (mostly agriculture, both unirrigated and irrigated), village council land (common land used for grazing), and government land. The government 'revenue wasteland' was generally held as *de facto* commons, which was in fact more like 'open access' areas—degraded and barren from overgrazing and fuelwood collection. Some of the revenue wasteland had been illegally privatised by the local villagers and in all three cases TGCS members removed illegal encroachments before starting the plantations. The leased areas were closed for several years to allow trees and grasses to grow, and were only opened for grazing when trees were beyond browsing height.

Although it has been more than 10 years since external support to the three cooperatives ended, plantations in all three sites are still being maintained and are growing (Saigal et al. 2008). The cooperatives are keen to renew their leases for the allotted land. The relatively secure tenure has encouraged members to invest in the land and protect the plantations, even after financial and technical support was withdrawn five years after estalishment. All three cooperatives kept their plantation guards even after the project stopped paying them. Outside the TGCS concessions, the remaining village common lands are slowly being privatised.

In the co-management arrangement, the leases temporarily provided the cooperatives with management and exclusion rights. The cooperatives were granted management responsibility in return for investments, support from the National Tree Growers' Cooperative Federation Limited, and the possibility of benefits. Although expected to prevent encroachment and comply with rules related to cooperative administration, they were given considerable leeway in making management decisions, including how to harvest and distribute resources, and how to organise management activities. Unlike the other cases, the government played a very passive role overseeing leased land, probably due to the small size and heavy degradation prior to the program. The cooperatives received financial and technical support from the NTGCF, and invested considerable effort and money to prepare the sites by carrying out soil and water conservation works, establishing fuelwood and fodder tree plantations, watering saplings, and protecting the sites from illicit grazing and harvesting of tree products.

The system has had only marginal impact on local livelihoods. One reason for the low impact is the 40 ha limit on leases, regardless of population size. Such small parcels cannot generate substantial livelihood and income benefits for all village households. Furthermore, most leased lands were of poor quality and highly degraded when handed over to the cooperatives. Continuous droughts in recent years limited the growth of fodder grass, and the grazing fee system—an important source of cash income for the cooperatives—had been suspended in the three sites. The yields of fodder grasses have fallen and as a result, at the time of the study the cooperatives have stopped the earlier practice of restricting access by the village livestock to their plantations during the monsoon season to allow grasses to regenerate (Saigal et al. 2008).

The cooperatives were obligated to follow standard cooperative regulations, but because of weak oversight by the government the groups have gradually become less democratic. Elections for leaders are not held regularly, and major decisions are made by a managing committee rather than the general assembly. For example, in one case the cooperative leadership decided to allocate the annual stock of tree fodder and fuelwood from the entire plantation through auctions (Saigal et al. 2008). The highest bidder pays upfront and can later resell

the produce in smaller lots to others. This practice reduced the transaction costs for the cooperatives, but it clearly violated the principles of cooperation, since profits go to those who can pay while the poor are confronted by higher prices. The highest bidder need not even be a member of the cooperative. Apart from inadequate state support, a major reason for this practice is the lack of awareness and the apathy of members who remain passive.

Co-management in the Guatemalan Petén

The last case study examines a community forestry concession model developed in the Guatemalan Petén. Historically, Guatemala's government has had a weak presence in the Petén, and its policies were often ambiguous or contradictory. In 1989, the creation of the National Commission for Protected Areas (*Consejo Nacional de Áreas Protegidas*, CONAP) signalled the movement of an environmental agenda to the forefront of state policy in the Petén. In 1990, much of the northern Petén was converted into the Maya Biosphere Reserve (MBR).

The original territorial scheme for the MBR encompassed 2.1 million ha with a strict conservation nucleus, a large multiple use zone (where sustainable timber and non-timber harvest was allowed), and a buffer zone to relieve pressure on the reserve. CONAP's mandate was to halt illegal logging, stop forest conversion for agriculture and ranching, stop the sacking of archaeological sites, and end illegal traffic in drugs, fauna, and migrant workers (Nittler and Tschinkel 2005). The initial restrictive policies in the reserve triggered serious conflicts with the local population. As competing interest groups resisted, it became more difficult for the government to enforce conservation policies that entailed the exclusion of important forest stakeholders (Monterroso and Barry 2008).

The main source of local opposition was an organisation founded in 1995 by community groups to pursue forest management rights that became known as the Association of Forest Communities of Petén (*Asociacion de Comunidades Forestales de Petén*, ACOFOP). In response to this resistance, government policy shifted to a co-management model in which 25 year forest management concessions were granted to some communities. In this plan concessions were granted to six communities within the multiple-use zone, six communities bordering it, and two local timber industries, covering 426,000 ha of forestland (Monterroso and Barry 2008). Community organisations were required to register with state agencies, develop management plans, follow technical norms, and certify their timber management operations. Each group was required to certify their operations according to third party international standards like those of the Forest Stewardship Council to maintain their authorisation to harvest timber. In addition, community concession organisations were required to control other forest users that held customary withdrawal rights to extract NTFPs. To overcome these costs, international conservation groups funded heavily by the United States Agency for International Development provided significant financial support and technical assistance to assure that community organisations qualified and continued to comply with new regulations for concessions. By 2005, ACOFOP had 22 member communities and organisations, representing 14,000 individuals in thirty communities (Nittler and Tschinkel 2005).

Under the co-management system in the Petén, transaction costs increased considerably not only in terms of the financial requirements to participate and gain approval, but also in terms of the time it takes for communities to engage in these bureaucratic processes. Compliance is complicated by the limited organisational and technical expertise of some community concession groups. Decision-making processes in communities can be slow and conflictive. The pace can make it difficult to react to change or respond to government requests.

The community concessions of the Petén do face significant obstacles, especially those operations with the weakest organisations and the least commercially valuable forests (Nittler and Tschinkel 2005). In some cases, individuals have attempted to seize concession lands as private property. The organisations face scepticism and outright opposition from industry and some NGOs (Gómez and Méndez 2005; Trópico Verde 2005). Also, in a region with a growing population and significant landlessness, the concession organisations face a potential threat from groups questioning the allocation of such expansive areas to a small number of community organisations. CONAP is not the only government institution with influence in the Petén and the MBR. Guatemala's tourism and cultural ministries, for example, have overlapping jurisdictions over resource management in the region. Suggested alternative policies have included efforts to create a new conservation area that would rescind forest concession rights. The government has also issued concessions for oil exploration that overlap timber management areas.

Community organisations and ACOFOP have increased their capacity and strengthened their organisations. Government agencies, like CONAP, though weak and underfunded, provide help with legal procedures and some support in the field. However, significant investments were required from external funders to develop management plans, set up lumber mills and train communities in trade and certification standards—investments that allowed the community groups to convert new rights into livelihood and income improvements (Mollinedo et al. 2002).

DISCUSSION

In theory, the partial transfer of management rights that creates co-management systems should not be problematic and could offer benefits from improved production, forest governance, and rural incomes. Workable co-management systems should consist of shared responsibilities and benefits for both government oversight agencies and forest communities, ideally combining the strengths of both parties. For example, government agencies with limited resources could transfer management rights to forest peoples who would have more power to control and govern forest lands, and exclude others

degrading the resource. In return, communities, strengthened by formal recognition, could better capture benefits from management and maintain their forest livelihoods. Well-designed systems would include processes of negotiation and feedback to adapt systems as needed. However, as these cases have shown, the creation of co-management systems has not been as smooth or as balanced as intended.

In all four cases, the state retained ownership of the forests (i.e., alienation rights) and offered some management rights, but always retained a role in the process placing significant responsibility on the shoulders of community groups. In each case, the ability to exercise management rights required that community-level stakeholders carry out specific tasks to gain authorisation. The state maintained control of management by imposing planning formats, technical standards, organisational models and administrative procedures. The management rights granted were conditional and, in three cases, temporary. Non-compliance with the system meant a risk of losing rights. Nonetheless, within these co-management systems, some power and responsibility were transferred to local stakeholders. All the groups could and did make operational decisions about their forest use; however, they were all required to stay within established parameters.

While each of the cases illustrated innovative attempts to transfer rights, responsibilities, and benefits to forest communities, the co-management frameworks were plagued by three types of problems—burdensome frameworks that placed high start-up costs and barriers to participation; imbalanced distribution of responsibilities for compliance, which fell more heavily on communities; and uniform and inflexible frameworks that were difficult to adapt and influence. In the following section each of these points will be discussed in greater detail.

Burdensome start up costs that create barriers to participation

In the cases observed, the legal frameworks and institutional arrangement of the co-management system created burdensome start-up costs that became barriers for some segments of the population. In the four cases studied, the process included complex requirements for approval involving technical and administrative hurdles, and capital investments beyond the means of typical rural communities. Paperwork with government bureaucracies added costs for communities through such prerequisites as identification papers for members, legal incorporation of the management organisation, and legal costs to defend property rights from others. In the cases where timber was managed, the arrangements commonly required forest inventories over thousands of hectares. These activities entailed marshalling community labour plus the logistical skills and capital to supply food and equipment to maintain workers in the forest. The development of management plans requires technical silvicultural knowledge, mapping, and computer skills not found in most rural communities, encouraging dependence on external technical support. In some cases, like Bolivia, communities were legally required to hire professional expertise, which can be costly. In the Guatemalan case there was the added cost of certification.

These start-up costs for preparing a forest management plan could be overcome in sites where there are high timber volumes or prevalence of valuable species available for harvest. However, communities are rarely granted such forests. Often they receive rights to forests that are degraded or that at least have previously been logged by timber companies. In such cases it is a challenge to generate sufficient income to recover the initial costs of investment in a management plan if not subsidised by third parties.

The end result is that only some community-level stakeholders can participate in community forestry programs. In all four cases, those communities that were able to participate were groups that had received substantial assistance from external entities, mostly NGOs with foreign financing. Such subsidies create risks of dependence on outside support, and the development of forest organisation models that cannot viably stand on their own. Local groups that did not have access to aid, or that did not meet criteria used by the external technicians to identify sites for support, were left on their own.

There are several ways that co-management approaches could be adjusted to make them more accessible to more communities. One way that co-management systems could better promote community forestry management would be to lower barriers produced by technical frameworks and regulations. The technical norms that are used for communities to manage timber are often copied from strict standards used to regulate the industrial logging sector, and thus assume high levels of capital and technical expertise. Some community groups have the resources, capacity, and interest to develop capital intensive logging operations, but not all communities want to or can work at that scale or intensity. One strategy could be to replace detailed planning instruments with a 'minimal standards' approach that would assure good environmental management while allowing independent decision-making by local actors (Ribot 2002). Simplified requirements could lower costs and facilitate participation.

Imbalanced distribution of costs and responsibilities

State oversight of forest management generally concentrates on commercial uses of forest resources in an effort to ensure sustainable use. This is intended to prevent the overexploitation of valuable forest resources by property owners once they have an opportunity for economic benefits. There could also be a concern that the poor would be vulnerable to manipulation by outsiders without government oversight. Although maintaining a role for government as a neutral arbiter could be justified, it is a challenge to provide this oversight and support in ways that do not hamper other aspects of the co-management arrangement. When outside support ends, there is a risk that projects will collapse because they are unable to cover the costs of compliance without subsidies. Among the cases, the Indian example is an exception; several years after the end of

external funding the cooperatives continue to manage their concessions, albeit at a very low level of activity and minimal costs of compliance.

While communities are required to make high up-front investments, there is no similar commitment from the governmental agencies to fulfil their obligations to community groups. For example, there are often substantial delays before communities receive any return benefit from their investment. Generating the required information for a management plan or logging authorisation can take months. The wait for a response from government agencies can take even longer, and depends on the pace of national bureaucracies. In the case of some of the Guarayos communities in Bolivia, the process of gaining approval for their forest management plans stretched over two years (Cronkleton et al. 2009).

Even after management plans are approved, community managers must continuously document activities to maintain approval. In only one case, India, did the state take most responsibility for the transaction costs through the project, but this was for small, degraded areas. In the three cases related to timber, the requirements included annual operating plans, and post harvest reports that must be submitted on time in the proper format to receive authorisation for harvest and sale. Legal controls often attempt to stop unsustainable or illegal resource use, but the burden of these measures usually falls disproportionately on the community groups attempting to comply with the law. Illegal loggers, by definition, have incentives to avoid governmental controls, while community groups that want to maintain approval must seek out the government to demonstrate compliance.

When community groups do gain approval it is usually only temporary, so these groups must continually strive to prolong their rights. Harvest permits have limited validity (for example one year in Philippines, three years in Bolivia) so if communities do not use the authorisation they lose it. A disadvantage of the concession systems (Guatemala, Philippines, India) is that the management rights in general have limited time spans. This can produce uncertainty and discourage sustainable, long-term decision-making.

Although community organisations are held to strict standards, too often, state agencies fail to meet their obligations. Ironically, community groups face sanctions if paperwork is late but have little recourse for delays caused by government bureaucracies. The problems produced by the failure of state agencies to hold up their share of the co-management arrangement are probably best illustrated by the example of community groups trying to defend their exclusion rights (Bolivia, the Philippines, Guatemala). In these cases, as community groups struggled to comply with forest management rules to meet management compliance, they found their forest units invaded by other groups or illegal loggers. State agencies were unresponsive to requests for help or ineffective in their actions. The issue is clearly illustrated in the Philippines where the cooperative lacked the economic and political power of the timber company to defend its interests so it struggled to pay necessary bribes, exclude illegal loggers, and pay protection money to rebels.

Technical assistance programs to support sustainable forestry initiatives with communities could play crucial roles in assuring that local people are not overburdened within the co-management system. Community alliances and partnerships with industry or other actors like NGOs could be mutually beneficial. However, these arrangements require some level of state oversight and regulation (i.e., neutral arbiter for enforcement of contracts) to assure that communities are not exploited and are treated fairly. Also, there should be reflective feedback within the system to assure that the subsidies through assistance programs are not masking initiatives that are not viable and that will collapse when assistance ends.

Uniform and inflexible legal frameworks

To a certain extent, it is understandable why governments would opt for uniform management models. They offer a general system with consistent standards that should be relatively transparent. Uniform systems avoid situations requiring case-by-case negations that would be even more chaotic and prone to corruption. However, uniform models are only appropriate for some groups and some kinds of management. In each of the co-management systems discussed here, the legal framework created community forestry models that were uniform and inflexible, designed by governments as 'one-size fits all' solutions. In the Bolivian, the Philippines, and the Guatemalan cases the models were designed for large-scale industrial timber management (technically complex, capital intensive, and requiring extensive forest areas). They were not adapted to the heterogeneous needs and conditions found among communities in each of these countries. These models were less applicable to groups that were managing NTFPs instead of timber; that were managing timber at small scales with rustic technology; or that had degraded forests that would not generate high economic return.

Specific examples of the problems with uniform frameworks can be seen in each of the cases. In the tree growers cooperatives from India, the uniform size limit for concessions—regardless of the number of cooperative members or availability of appropriate state land—surely decreased the level of benefits for some larger cooperatives and limited the potential impact of the program to rehabilitate degraded lands. In the Philippines case, the cooperative was more accessible to migrants that had formerly worked for the timber company than the local indigenous population that lacked the necessary skills for industrial logging and had different strategies for managing the forest. In Guarayos, Bolivia, only communities that controlled large (i.e., several thousand hectares) parcels of forest reserve containing commercial timber could justify the investment (or at least attract the interest of NGOs for support). In the Guatemalan concession model, timber operations were less viable for the community groups that received smaller more degraded concessions, so those groups struggled to maintain operations and defend their forests.

One way to adjust the system and better balance responsibility

would be for state agencies to consider different levels of control for different groups. For example, some types of oversight would be appropriate for groups that are initiating management plans. Ideally, it would treat the oversight as an opportunity to facilitate learning and feedback rather than law enforcement to help groups adjust to the system. Once a management organisation has a proven track record of compliance, it may be possible to lower levels of oversight. Groups that have gained third party certification could qualify for less oversight by state agencies. Where forests are degraded, lower requirements to receive management rights and lower compliance costs could encourage communities to invest in the recuperation of these forests. If there are high costs of participation in management it could prove to be a major disincentive to maintaining degraded forests that provide low economic return. Also, groups with stronger social organisations may be allowed more auto-regulation. If local traditional authorities could provide oversight, there would be less burden on government agencies that could verify compliance only periodically. As a result, oversight could shift emphasis to assure that all residents interested in management are allowed to participate and that benefits are equitably distributed.

Co-management should be seen as a process of negotiation and dialogue between governmental and community stakeholders. It requires monitoring and reflection to continually update and improve the system. State forest bureaucracies are often rigid or unwilling to evaluate or adjust regulatory frameworks, but flexibility is necessary. Balancing the need to address local contexts without dissipating policy frameworks into myriad locally specific rules is a challenge.

CONCLUSIONS

In forest tenure reform, the devolution of the bundle of rights to community-level stakeholders is usually incomplete. The partial transfer of management rights creates co-management situations where communities and state agencies not only share the responsibilities and the costs but also the benefits of resource management. In theory, co-management can be a very effective means of balancing the strengths of different actors and dialogue and feedback between actors should result in systems that have the flexibility to adjust to changing conditions or needs of either party. However, in practice, the way partial devolution of rights takes place creates faulty co-management systems. These systems exclude some potential participants because of the high start up costs; place unbalanced burden and responsibility on community-level actors that are able to participate; and are based on uniform and inflexible frameworks that limit negation, innovation, and adaptation.

In the case of community forestry discussed here, the partial devolution of management rights through co-management systems had several trade-offs. Giving up some legal control over resource use decisions allowed the government to gain greater cooperation from local stakeholders. Because community-level stakeholders gain benefits by complying with official rules and guidelines, they are more likely to have vested interests in maintaining forest resources. In cases like Guatemala, the concessions have relieved some resource conflict and strengthened the buffer around the MBR. In Guarayos, options for community forest management helped some communities maintain forests in zones experiencing high rates of deforestation (although this depended on the level of external pressure and was not the case in all communities). The increase in benefits for community groups comes with increased responsibilities and obligations. In some cases, the burden of new regulations and intrusion by the government outweighs the benefits of participation for some local people. In each of the cases the co-management model only helped certain segments of the rural population in the region.

A central finding of this comparison is that the partial devolution of management rights by the state creates persistent, significant barriers to the adoption of community forestry and in some cases it has limited the benefits to local participants. In the worst cases, state regulations introduced to guide decisions become rigid frameworks that hamper the management operations of communities and exclude many other community groups from participating. Mechanisms are needed to facilitate dialogue between state agencies and communities so that more local input contributes to the design and revision of regulations within co-management systems.

Co-management systems surrounding community forestry could provide mechanisms to conserve forests and increase the well-being of local people; however such ends require adjusting the way these systems operate. Legal frameworks that underlie co-management systems need simplification, possibly based on minimal standards to facilitate greater participation. The systems used by the state for regulating and monitoring management need to better distribute responsibilities and lower burdens on groups making good faith attempts at sustainable resource use. In addition efforts at control by governments need to be balanced with increased technical assistance or programs like rural credit to promote participation by communities. Finally, policy processes need to be more inclusive to accommodate a broader range of stakeholders; need to include feedback mechanisms; and encourage adaptive change if co-management is to meet its potential.

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